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## A New Pleistocene Crocodilian from Guatemala<sup>1</sup>

BY CHARLES C. MOOK

In the years 1948 to 1953 Barnum Brown collected fossils from the interior of Guatemala, among which are some remains of crocodilians. Of this crocodilian material the most significant unit is a left maxillary bone that shows distinctive characters. This was collected from beds of probably Pleistocene age (as shown by the accompanying fauna) at Treasure Island, Peten, Guatemala.

This specimen is definitely not an alligatorid. It agrees, in so far as the characters preserved indicate, with the characters of the genus *Crocodilus*, particularly with those of the species *Crocodilus moreletii* Duméril, a living form, which, according to K. P. Schmidt, is confined to Guatemala and Honduras. Barbour and Ramsden, in 1919, considered *C. moreletii* to be synonymous with *C. rhombifer*, of Cuba. Mook, in 1921, followed this interpretation. In 1924, however, Schmidt described material of typical *C. moreletii* and noted distinctions that could be made between it and *C. rhombifer*. On plates 7 and 8 of Schmidt's paper a skull of *C. moreletii* is figured. This exhibits some characters that agree with *C. rhombifer* and also some differences; the latter will be discussed in a later article. The plates also show characters that agree with the specimen now under consideration, but again there are noticeable differences. These differences are slight, but they are definite and are of the sort normally used in the classi-

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<sup>1</sup> Contributions to the Osteology, Affinities, and Distribution of the Crocodilia,  
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fication of the Crocodilia. The specimen collected by Brown is therefore considered as the holotype of a new subspecies of crocodilian, referable to *Crocodilus moreletii* Duméril.

***Crocodilus moreletii barnumbrowni*, new subspecies**

The subspecies is named in honor of the discoverer of the type, Dr. Barnum Brown.

**TYPE:** A nearly complete left maxillary, A.M.N.H. No. 7471.

**TYPE LOCALITY AND LEVEL:** "Treasure Island," Guatemala, Pleistocene (probably middle Pleistocene).

**SUBSPECIFIC CHARACTERS:** Having the characters of *Crocodilus moreletii* but with a more angular external border and with the maxillary plate between the palatine fenestra and the tooth row of more variable width.

**DETAILED CHARACTERS:** The lateral border is decidedly angular in form. The portion from the premaxillo-maxillary suture on the dorsal surface to the level of the middle of the fifth maxillary alveolus extends outward and backward at an angle of approximately 45 degrees with the anteroposterior axis of the skull. From the level of the middle of the fifth maxillary alveolus to the level of the space between the seventh and eighth maxillary alveolus the border is essentially straight anteroposteriorly. From the eighth to the twelfth alveoli (the last preserved) it curves outward and backward, making a decided outward convexity. This course of the lateral border departs from a straight or a gently curved course more than in any known crocodilian. On the dorsal surface the pitting is moderate and more or less evenly distributed.

On the palate the specimen is bounded anteriorly by the premaxillo-maxillary suture; the sutural character of this boundary is evident from the specimen. This extends inward and forward from the external border at the level of the middle of the first maxillary alveolus to the midline of the alveolar row between the last premaxillary alveolus and the first maxillary alveolus, then turns inward and backward to the level of the posterior border of the first maxillary alveolus at a point about three-fifths of the distance from the external border to the midline, then extends in an essentially straight, transverse course to the midline.

Twelve alveoli are preserved. Of these the size increases regularly and rapidly from the first to the fifth, which is by far the largest in the series. The length and breadth of these five alveoli are in each case essentially equal, the openings being irregularly circular. They

are all spaced moderately close together, but their upturned edges are in no case confluent with one another. Alveolus 6 is close to alveolus 5 (the distance between them equaling that between alveolus 3 and 4 or 4 and 5). Alveolus 6 is essentially the same size as 4, but is differently shaped, being slightly longer than broad. Alveolus 7 is smaller than 6 and is spaced rather far from it. Alveolus 8 is smaller than 7 and is separated from it by a wide space. This space is the greatest of any of the interalveolar spaces in the series. It is longer than alveolus 7 or alveolus 8. It has a faint depression in it, indicating the place of bite of a lower tooth. Alveolus 8 is almost as far from 9 as it is from 7. In this space, too, is a depression that suggests the bite of a lower tooth, here nearer the external border than in the 6 to 7 space.

Alveoli 8, 9, 10, and 11 are spaced close to one another but with small, definite, separating spaces between them. Their edges are not uprolled, as they are in alveoli 1 to 5. Alveolus 10 is the next in size to 5, being almost as long anteroposteriorly but definitely narrower laterally. Alveoli 9 and 11 are subequal in size, and alveolus 12 is smaller. Alveolus 9 has the greatest discrepancy between longitudinal and transverse measurements, the ratio of breadth to length being 72/100. Alveolus 13 apparently resembled 12 but probably was slightly smaller. Its posterior border is not preserved. The small pits just inside the alveolar row are small and few and far apart.

The outer border of the left palatine fenestra is partially preserved and indicates that the opening extended at least as far forward as the level of the posterior border of the eighth alveolus. The order of the alveoli in size from the smallest to the largest is: 1, 2, 3, 8, 7, 4, 6, 9, 10, 5.

On the palate the horizontal plate of the maxillary between the tenth and eleventh maxillary alveoli and the external border of the palatine fenestra is of uniform width in the specimen of *C. moreletii* figured by Schmidt. In the American Museum specimen here described this plate varies in width, which suggests that the fenestra did not extend so far forward as is indicated in Schmidt's plate.

#### MEASUREMENTS (IN MILLIMETERS)

Maximum length of maxillary as preserved	239
Length of alveolar series (alveoli 1 to 12 inclusive)	225
Length of first five alveoli	75
Length of fifth alveolus	19
Length of tenth alveolus	15
Length of first alveolus	8

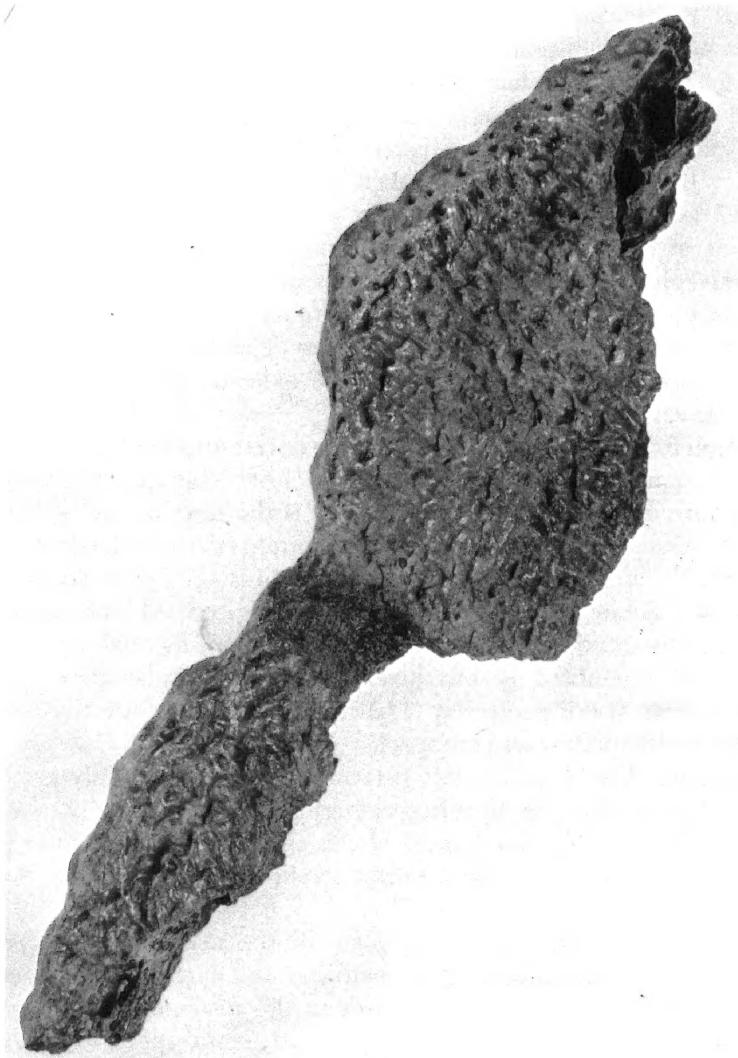


FIG. 1. *Crocodilus moreletii barnumbrowni*, new subspecies. Type, left maxillary, A.M.N.H. No. 7471, superior view. About two-thirds natural size.

Length of space between seventh and eighth alveoli	13
Breadth of maxillary, midline to lateral border at level of space between fifth and sixth alveoli	67
Breadth of maxillary at level of space between sixth and seventh alveoli	68
Breadth of fifth maxillary alveolus	19
Breadth of tenth maxillary alveolus	15
Breadth of first maxillary alveolus	8

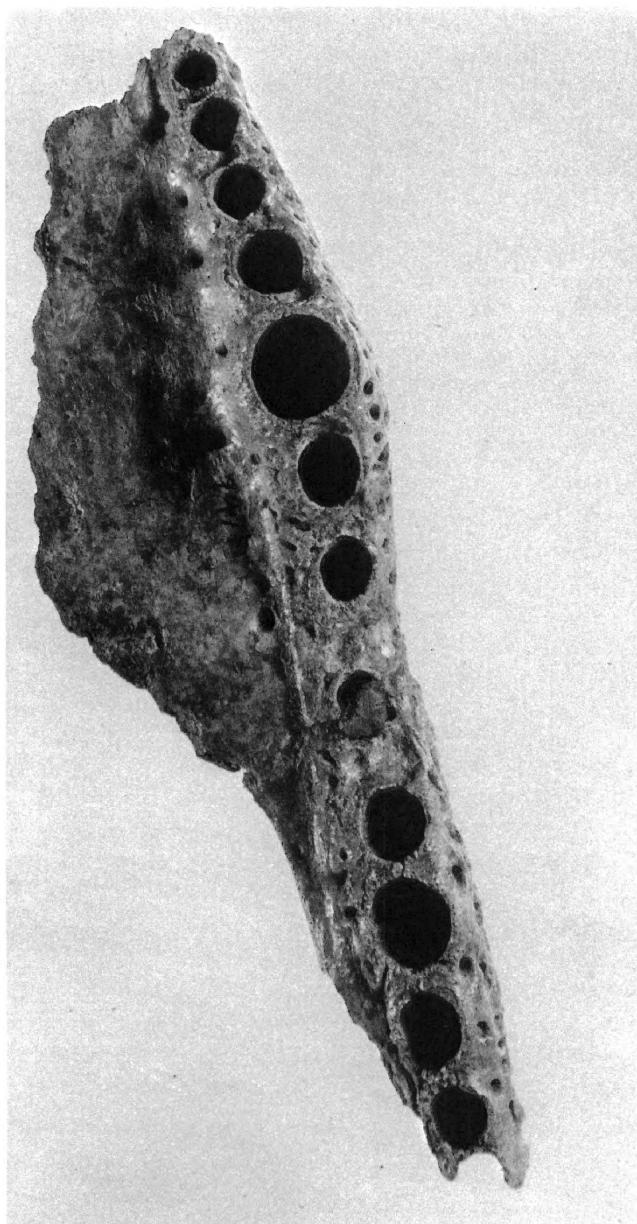


FIG. 2. *Crocodilus moreletii barnumbrowni*, new subspecies. Type, left maxillary, A.M.N.H. No. 7471, inferior view. This view is slightly oblique to the plane shown in figure 1, which has the effect of obscuring the angular nature of the external border, adequately shown in figure 1. About two-thirds natural size.

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